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ABSTRACT

This book presents interactive problem-solving situations based on the principles of Total Quality Management. Following the introductory chapter, the second chapter describes the two stages of the problem-solving process: (1) analysis of the problem and its causes, and (2) identification of a solution. Each stage is comprised of three phases--generating, scoping (or organizing), and closing (making the final decision). It also explains the book's focus on management tools. Chapters 3-5 describe case studies that illustrate how teams used the management tools to schedule a program for gifted and talented students at an elementary school; develop a school discipline policy at a high school; and select a course textbook in a business and management department at a community college. To work through the process of analyzing a problem and identifying a solution, team members used such tools as an affinity diagram to encourage creative thinking, a relations diagram to determine cause-effect relationships, and prioritization techniques to rank issues and alternatives. The second part of the book is a reference guide that explains when and how to use the management tools. (LMI)

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How to Solve Typical School Problems

Nancy Ohle and Cindy Lakin Morley

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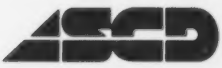

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How to Solve Typical School Problems

Nancy Ohle and Cindy Lakin Morley

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1
Total Quality Management and Problem-Solving

TOTAL QUALITY MANAGEMENT (TQM) IS SYNONYMOUS WITH elimination of waste. Although eliminating waste makes sense in a manufacturing or industrial environment, how does it fit in education? Perhaps the United Negro College Fund made the fit most aptly with its motto: "A mind is a terrible thing to waste."

Total Quality Management is not a "program of the month." It's a fundamental change in the way we live. Planning for a productive future becomes a primary focus, rather than allowing life to take us where it may. Like many of the activities our schools support, TQM pushes for continuous improvement—of the way we work, of the results we strive for, and in the way we treat people. To support this continuous improvement, we must look at how we currently pursue education and determine new processes to eliminate waste.

Total Quality Management focuses on the customer. In education, that means never losing sight that our primary mission is educating our young people. But what does "educating our young people" mean? Unfortunately, it may mean different things to different people. And that's where problem-solving supports TQM. Some work processes at our schools are easily improved; for instance, switching to a new food provider for a cafeteria when the change is based on a competitive bid system. But many processes involve people's opinions and input, making the problem-solving

process difficult. These more interactive problem-solving situations are the focus of this book.

If only all problems were as easy to solve as an algebraic equation! Most problem-solving situations, however, involve trial and error. When working with staff, administrators, parents, students, and the community, we'd like to minimize error, and we'd like to use proven resources in the process. Since our educational institutions are usually in our communities for a long time, we must plan carefully for our futures and eliminate misunderstandings to build community trust. The problem-solving process we introduce in this book focuses on identifying problems that demand the best use of your resources and gives you tools to help clarify and confirm the input you receive during the process.

2
The Problem-Solving Process

PROBLEM-SOLVING CAN BE SIMPLE OR COMPLEX, DEPENDING UPON the issues and the number of people involved in the process. Because quality efforts in our schools strive to involve groups of people affected by decisions, this book focuses on verbal problem-solving in teams. If multiple stakeholders are involved, if your decisions will affect others, or if you need a commitment from others to implement solutions, a team approach is preferred. Please note: A time-consuming, team approach is not always recommended when solutions are simple and the number of stakeholders is limited.

The problem-solving process has two stages: analyzing a problem followed by identifying a solution. To solve a problem accurately, we must step back and analyze it. This activity may sound simple, but it is hard to do when we are often rewarded for solving problems quickly. Have you ever solved the wrong problem? For most of us, the answer is yes. When we slow down and examine a problem, we increase the chances of solving the right problem once instead of the wrong problem a dozen times. Solutions are more effective and often much less expensive (both in dollars and time).

An example of this process was offered by Brad Greene at a seminar on TQM.[1] Greene described a school in California that had a problem with students fighting on school grounds. When the solution of normal discipline

[1]see Brad Greene, "The Quality School" (seminar presented at the Valley Plaza, Midland, Mich., March 1993).

methods didn't work, the principal and teachers started asking the students about the fights. After much listening and sorting of ideas, they discovered that the students were fighting because of peer pressure. A disagreement would start, a crowd would gather, and the students felt obligated to fight. With this clearer picture of the problem, a solution was developed. The students agreed to ignore anyone who was involved in a disagreement; they would walk away from the situation, thus not drawing attention to the fighting students. Did this work? Yes! The number of fights dropped significantly. The faculty was finally solving the right problem. And, in keeping with TQM, students were involved in both analyzing the problem and identifying a solution, thus increasing their commitment to the solution.

Phases of Problem-Solving

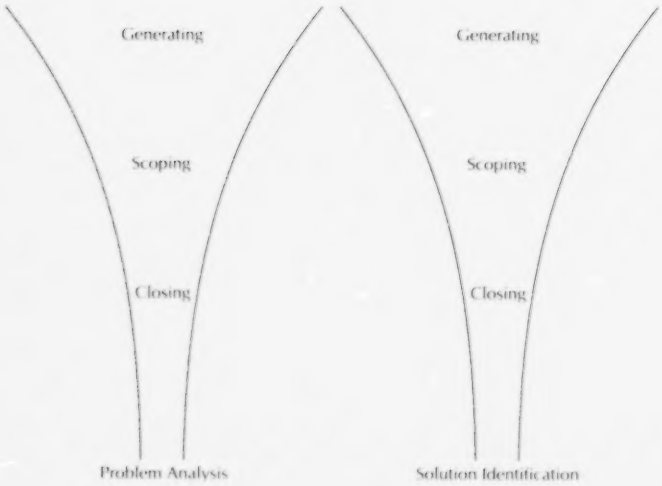
Collecting and organizing ideas in the problem-analysis and solution identification stages follow the same pattern of generating ideas, scoping ideas, and closing. This pattern is illustrated in Figure 2.1. Notice the funnel shape. We start with an expansive opening of ideas (generating phase); we organize and prioritize the ideas (scoping phase); and finally, we narrow even further to reach an agreement on the causes of the problem or the solution options that the group is willing to support and implement (closing phase).

Generating Phase

In this initial phase, ideas are not right or wrong—all ideas are good ideas. The goal is to get ideas, problems, issues, and opinions out in the open. Before we can organize the information, we need to see what's out there. We must hold evaluation until later. If we start evaluating in this phase, we may limit creativity and hinder "getting out of the box" and considering breakthrough ideas. This phase is often fast moving, with high energy.

- You will know you have completed the generating phase in *problem analysis* when the group has agreed that all ideas have been heard and that a problem exists.
- You will know you have completed the generating phase in *solution identification* when all tenable solution options have been identified.

Figure 2.1
Phases of Problem-Solving



Scoping Phase

This phase is often referred to as the organizing phase. Ideas from the generating phase are clarified, sorted, and combined. Compared to the generating phase, this phase seems tedious; yet it is critical that a team move slowly through clarifying the ideas gathered in the generating phase. If the ideas mean different things to different people, this lack of clarity can make further agreements reached in the problem-solving process meaningless. Evaluating ideas begins in this phase.

- You will know you have completed the scoping phase in *problem analysis* when the group has agreed on the definition of the problem and where to focus their efforts.
- You will know you have completed the scoping phase in *solution identification* when the group has agreed on how to sort and classify each option, based on the criteria they have established.

Closing Phase

This is the decision-making phase. False agreements made earlier will show themselves here, and you may have to return to an earlier phase and renegotiate prior agreements.

- If you are working in *problem analysis,* the group will agree on root causes of the problem.
- If you are working on *solutions,* the group will agree on which alternative to support and implement.

The stages of problem analysis and solution identification, each using generating, scoping, and closing phases, may take 10 minutes, 10 days, or 10 months. Make sure to work through the phases and solidify the agreements marking the end of each phase. The team leader is responsible for ensuring that these agreements are firm.

Tools of Problem-Solving

In TQM systems, two types of tools are used: simple tools and management tools. Simple tools handle numerical data. Management tools handle verbal data logically. Our focus is on using management tools that will enable you to do the following:

- Identify and evaluate the challenges facing a team,
- Break down large issues into smaller, manageable pieces,
- Find the true cause of a problem before implementing expensive solutions,
- Evaluate alternative courses of action,
- Reach agreement on a plan of action, and
- Develop a true consensus.

When a team is engaged in problem-solving, members may have indicators that the process they are using is not working and needs to be modified. A team leader may not be sure what to do next or which problem-solving tool to use. A problem-solving tool may not be working or a team may be losing focus. To help navigate through this transitional period, a leader must ask three questions:

- *Where are we headed* (what are our desired outcomes)?
- *Where are we now* (which phase and what agreements have we reached)?
- *How do we get from here to there* (to our desired outcomes)?

A sailing analogy may be helpful. When at sea, a sailor reaches a transitional period when the wind dies or changes direction. The boat had been cruising along; then the sails start to flap, and the boat loses speed. The sailor needs to remember where the boat was headed. What is the goal? Where does she want to be at the end of the day? She needs to assess where the boat is at the current moment. What milestones have been passed? The sailor then needs to determine how to get to the destination. What would be the best tack? What adjustments need to be made to the sails? Is it time to start the engine? Asking these questions will help the sailor get back on course or chart a new course in reaching that final destination.

To lead a group and navigate through process transitions, a team leader must have a thorough understanding of the problem-solving tools available. Figure 2.2 shows the tools that are often used in each problem-solving phase. They are described in "The Tools of Problem-Solving" section of this book, a reference guide that explains when and how to use them.

Chapters 3, 4, and 5 each describe a case study that demonstrates how to use the management tools. When a tool is used, the page number for the tool in "The Tools of Problem-Solving" section is provided in parentheses. Examples of how these tools can be used are not intended to be prescriptive. Each problem-solving issue and each problem-solving session is different. A team leader must decide on how to proceed, based on the issues, the people involved, time limitations, history of the problem, and the problem-solving environment.

Figure 2.2
Problem-Solving Tools

PHASE	TOOLS
GENERATING	Perception Sharing Nominal Brainstorming Popcorn Brainstorming Brainwriting Break-Time Brainwriting Flip Chart Brainwriting Silent Flip Chart Brainwriting Affinity Diagram Tree Diagram
SCOPING	Information Sharing Sorting Prioritization Techniques • Multiple Vote • Rank Order Relations Diagram Matrix Diagram Measurement Map
CLOSING	Negative Questioning A + B = C Trial Close Series of Why Else Series of Why

Case Studies in Problem-Solving

3
Scheduling for Gifted and Talented Students

MARIA VIRGILI, THE ACORN HEIGHTS ELEMENTARY SCHOOL GIFTED AND talented education teacher, was in the principal's office with hands thrown in the air. She was ready to give up her position over what appeared to be "scheduling out" issues. She was trying to run a program that pulled 5 to 10 students out of the regular classroom into the G/T room one hour a week. Maria also met with individual students who expressed interest in subject areas requiring research. Add to that the special programs that Maria ran for all students at Acorn Heights, and she lived a logistical nightmare. But what pushed Maria to the limit was the constant verbal abuse she took from fellow teachers at Acorn Heights about disrupting *their* schedules.

"You'd think teachers would have a little empathy for me with my juggling everybody's needs in this school," said Maria, "instead of constantly complaining how my one little hour here and there is making their lives miserable! I'd like to see one of them walk in my shoes for a day!"

Principal Eamonn Black listened to Maria vent. He had heard it all before—Maria had been complaining about scheduling for two years. And he had had more than an earful of complaints from her colleagues about the conflicts scheduling out of regular class caused—parents complaining that their G/T children missed out on interesting activities, parents of non-G/T students complaining that their children were given busy work to pacify them while the G/T kids were out, classroom teachers who were upset because they were being put in a constant tug-of-war—not to mention the interpersonal

problems caused by a G/T teacher with little seniority arguing with higher seniority teachers who resented her program.

After Maria left his office, Eamonn decided that the constant bickering had to stop. A meeting to address the issue was needed, with participation limited to a few teachers so that Maria would not feel ganged-up on. Eamonn invited a representative from the lower elementary grades, one from upper elementary, the art teacher, and Maria. All agreed to meet on Wednesday, October 15, from 3:30 p.m. to 5:00 p.m. In addition to the principal, attendees included Georgia Kalinowski, 2nd grade; John Bell, 5th grade; Bridget McIntyre, art; and Maria Virgili, G/T. In the meeting announcement, Eamonn included the purpose and desired outcome for the meeting:

- Purpose: To determine the extent of the problems associated with scheduling out for G/T students.
- Desired Outcome: A list of realistic suggestions for the problems associated with scheduling out G/T students.

Eamonn also asked the attendees to talk with their colleagues in advance about the issue so they could represent their colleagues' views at the meeting.

First Meeting

The group met in Eamonn's office then moved to Bridget's room for more space. In this generating phase, Eamonn wrote on an easel the initial problem statement: There are problems associated with scheduling out for G/T students. Eamonn gave the teachers large Post-it Notes and markers. He asked them to summarize their responses to the problem by writing one idea per card (or Post-it Note), using large letters and no more than seven words per card (**Affinity Diagram**, p. 54). The group, including Eamonn, took five minutes to write out as many cards as possible. Eamonn chose to use the affinity diagram as a tool because so much animosity surrounded the issue. If he had asked for ideas orally, there would be a high risk of losing focus and blaming others.

Once the cards were completed, Eamonn attached them to a blackboard. He asked if all ideas had been

heard—that is, were all ideas represented on the board? Team members nodded in agreement. To move into the scoping phase, Eamonn explained that the next step was to clarify each idea to make sure everyone understood its meaning. For each card, he asked if there were any questions on what the idea meant. If questions arose, discussion was limited to one minute to clarify the idea.

Eamonn then asked the team to get up and, without discussion, arrange the random cards into similar categories. This was a time for sorting, not evaluating ideas. He wanted the team to read and absorb each team member's concerns and then, as a group, silently arrange the concerns into logical categories before orally reacting to them. After the cards were organized, Eamonn asked the group to label the categories. Figure 3.1 shows the results. The group arranged the ideas under five categories: logistical issues, lack of consistency, politics, kids' morale, and teacher morale.

Sorting the ideas led to more questions. Eamonn stated that this time was an opportunity to get additional information about issues, but that lobbying for your issue or getting defensive was not acceptable. The group agreed.

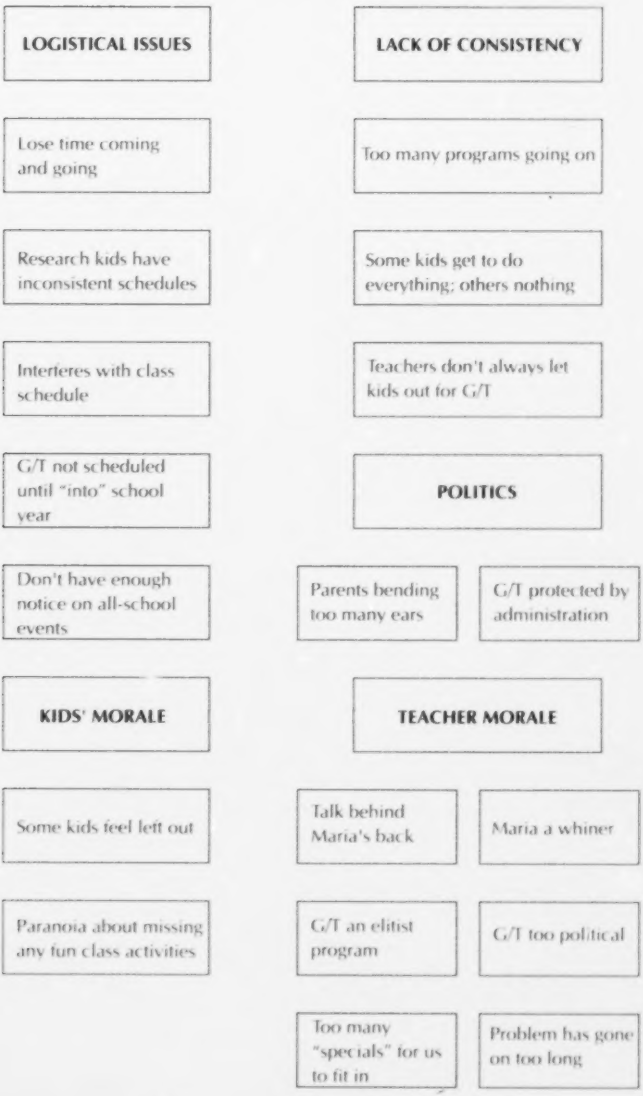
As the discussion opened up, Eamonn needed to step in with a ground rule: "You're only allowed one minute to clarify an issue." Discussion was getting heated, and the group was ignoring previous ground rules about lobbying.

As the discussion continued, Eamonn realized that much of it was simple griping. He let the discussion continue, however. He had participated in venting on a one-on-one basis with many teachers, but perhaps this was the time to get all the gripes out on the table together.

Georgia thought "G/T too political" belonged under politics, not under teacher morale. Maria said it should stay where it was. Since the card was John's, he had the final say on where it belonged. John asked if it was all right to place it under two categories; Eamonn said "yes." John wrote another Post-it Note and included the second one under politics.

Once the group agreed that the information on the affinity diagram was properly organized, Eamonn called a five-minute break to let them relax and stretch.

Figure 3.1
Affinity Diagram: Grouping Issues by Category


LOGISTICAL ISSUES
Lose time coming and going
Research kids have inconsistent schedules
Interferes with class schedule
G/T not scheduled until "into" school year
Don't have enough notice on all-school events
KIDS' MORALE
Some kids feel left out
Paranoia about missing any fun class activities
LACK OF CONSISTENCY
Too many programs going on
Some kids get to do everything; others nothing
Teachers don't always let kids out for G/T
POLITICS
Parents bending too many ears
G/T protected by administration
TEACHER MORALE
Talk behind Maria's back
Maria a whiner
G/T an elitist program
G/T too political
Too many "specials" for us to fit in
Problem has gone on too long

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After the break, Eamonn pointed out that the group had reached agreements for the generating phase and the scoping phase of problem analysis. They had agreed that all ideas had been heard and that a problem existed (generating phase); they had agreed on what the problem was and where to focus (scoping phase). Eamonn said he'd like to move into the closing phase by focusing on one or two issues, rather than on everything that was mentioned. The tool he chose was the **Relations Diagram** (p. 60) to help determine which category had the greatest impact on the other categories.

While the other team members had been on the break, Eamonn had removed the Post-it Notes from the blackboard and arranged them around the problem statement, which he had written on an easel (see Figure 3.2). He arranged the idea cards under the category cards.

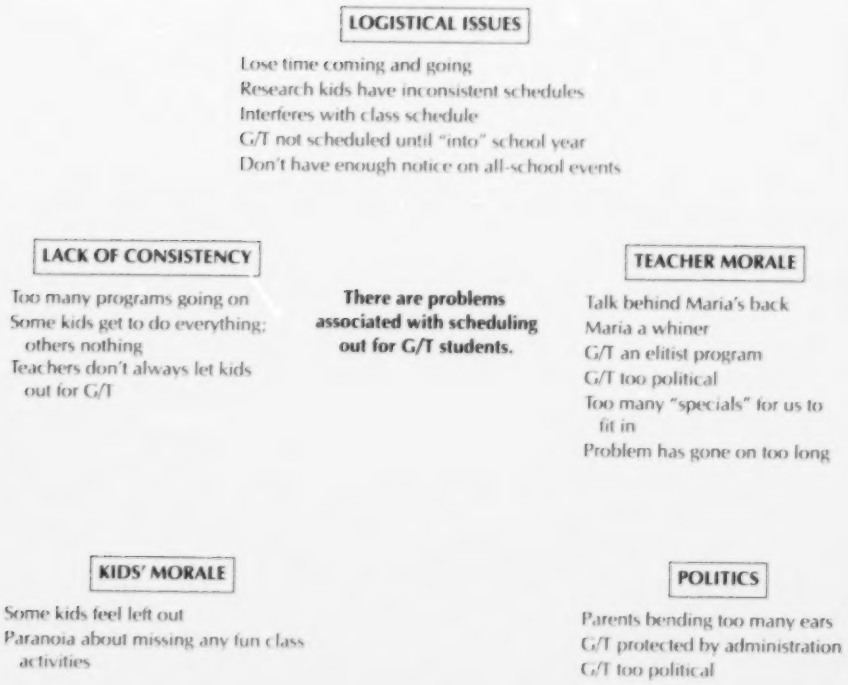
Eamonn explained the next steps: "We'll look at one category at a time and determine if a cause-and-effect relationship between each of the categories exists. If it does, I'll draw a line from one to the other. Then I'll ask which category is the cause and which is the effect. Once we've agreed on that, I'll draw arrows on the lines to indicate cause [arrows will point away from a category] and effect [arrows will point to a category]. We'll move clockwise so that no categories are left out."

The group immediately wanted to put arrows on the lines going both ways. Eamonn pressed them to determine which was the more powerful causal factor. When finished, the group added up the arrows and showed the totals on the relations diagram (see Figure 3.3).

It was obvious that lack of consistency, followed by kids' morale and politics, was driving the problems associated with scheduling out for G/T students. Arrows indicating an effect on teacher morale showed that teachers had a legitimate issue and were not just griping.

To obtain a focus for problem-solving, Eamonn asked if the group would be willing to concentrate on lack of consistency. They vehemently answered no. They agreed that they would *begin* with lack of consistency; but by working with other teachers in the building, they could also come up with some solutions to the issues of kids' morale and politics (**A + B = C**, p. 64).

Figure 3.2
Affinity Diagram: Grouping Categories Around the Problem Statement


LOGISTICAL ISSUES
Lose time coming and going
Research kids have inconsistent schedules
Interferes with class schedule
G/T not scheduled until "into" school year
Don't have enough notice on all-school events
LACK OF CONSISTENCY
Too many programs going on
Some kids get to do everything; others nothing
Teachers don't always let kids out for G/T
There are problems associated with scheduling out for G/T students.
TEACHER MORALE
Talk behind Maria's back
Maria a whiner
G/T an elitist program
G/T too political
Too many "specials" for us to fit in
Problem has gone on too long
KIDS' MORALE
Some kids feel left out
Paranoia about missing any fun class activities
POLITICS
Parents bending too many ears
G/T protected by administration
G/T too political

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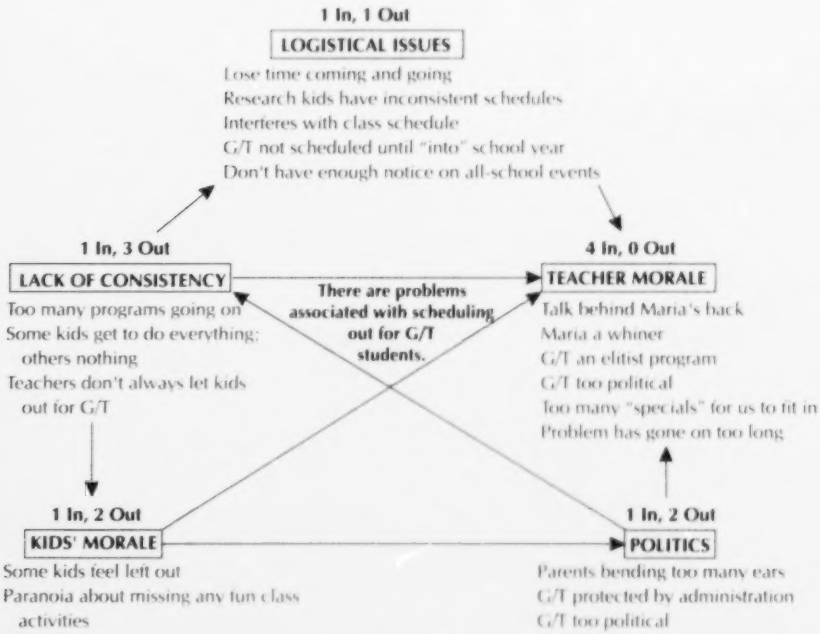
Eamonn agreed and ended the meeting, instructing the group to solicit ideas from their colleagues on solutions to lack of consistency before the next meeting. Georgia suggested putting an informal survey on the issue in the teachers' lounge (**Break-Time Brainwriting,** p. 52). Eamonn agreed.

Figure 3.3
Relations Diagram: Arrows Pointing to Driving Issues (Causes) and away from Key Issues (Effects)


1 In, 1 Out
LOGISTICAL ISSUES
Lose time coming and going
Research kids have inconsistent schedules
Interferes with class schedule
G/T not scheduled until "into" school year
Don't have enough notice on all-school events
1 In, 3 Out
LACK OF CONSISTENCY
Too many programs going on
Some kids get to do everything;
others nothing
Teachers don't always let kids
out for G/T
There are problems associated with scheduling out for G/T students.
4 In, 0 Out
TEACHER MORALE
Talk behind Maria's back
Maria a whiner
G/T an elitist program
G/T too political
Too many "specials" for us to fit in
Problem has gone on too long
1 In, 2 Out
KIDS' MORALE
Some kids feel left out
Paranoia about missing any fun class
activities
1 In, 2 Out
POLITICS
Parents bending too many ears
G/T protected by administration
G/T too political

One Week Later

The group met to find solutions to the lack of consistency problem. They used **Nominal Brainstorming** (p. 49), going twice around the room to get everyone's initial suggestions, then opened up to **Popcorn Brainstorming** (p. 50) once the ideas were rolling to capture

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the group's enthusiasm and build on each other's ideas quickly. Eamonn chose Bridget to record the ideas since she was fairly neutral on the subject. Eamonn reminded the group that in a brainstorming activity, they can ask questions only to clarify; they can piggyback ideas; they should think creatively; and passing is okay. No judgment of ideas is allowed. Figure 3.4 shows their list of suggestions.

Figure 3.4
Brainstorming: Suggestions for Handling Lack of Consistency

1. Limit number of programs.
2. Have all-school programs or nothing for "specials."
3. Limit number of G/T activities per student.
4. Make policy on releasing students for G/T.
5. Eliminate G/T.
6. Give teachers more advance notice on offerings.
7. Maria should prioritize program offerings.
8. Eliminate research program.
9. Honor students' G/T schedules.
10. Do more G/T activities after school or on weekends.

Eamonn asked if any suggestions needed to be clarified. When all issues were clarified, he asked if any suggestions could be combined. The group agreed that "limit number of programs" and "Maria should prioritize program offerings" could be combined.

Eamonn said that he would like them to evaluate the brainstormed ideas based on two criteria: *impact on the problem* and *ease of implementation*. He drew a **Matrix Diagram** (p. 62). Column 1 listed the suggestions, and the headings for Columns 2 and 3 each showed a criterion. The evaluation was based on a low, medium, and high rating system. Eamonn gave a tick mark for each vote (see Figure 3.5).

Figure 3.5
Matrix Diagram: Rating the Suggestions

Suggestion	CRITERIA: Impact			CRITERIA: Ease of Implementation		
	Low	Medium	High	Low	Medium	High
1. Limit number of programs; Maria should prioritize program offerings.		I	IIII			IIII
2. Have all-school programs or nothing for "specials."		I	IIII	III	II	
3. Limit number of G/T activities per student.		IIII	I	III	II	
4. Make policy on releasing students for G/T.			IIII		IIII	I
5. Eliminate G/T.			IIII	IIII		
6. Give teachers more advance notice on offerings.	II	III		II	III	
7. Eliminate research program.	I	IIII		III	II	
8. Honor students' G/T schedules.	I	III	I	III	II	
9. Do more G/T activities after school or on weekends.		I	IIII	IIII		

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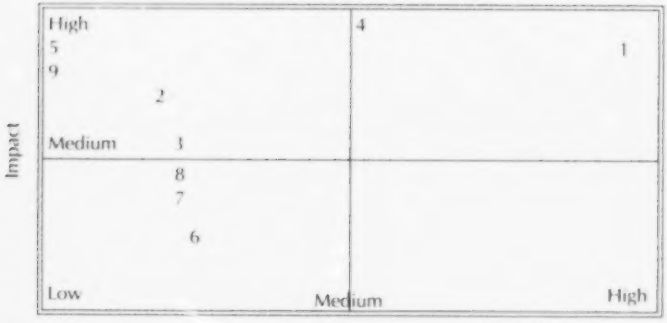
After the group was polled, Eamonn called a five-minute break so he could mark the results on a **Measurement Map** (p. 62). Each number on the map referred to a numbered suggestion on the matrix diagram; the position of a number was based on a weighted evaluation of the group's votes (see Figure 3.6).

After looking at the map, the group agreed that limiting the number of programs (Suggestion 1) made sense for impact as well as for ease of implementation. Maria thought students and parents might be disappointed at limiting the number of programs, but they also might not even realize the change. Limiting the programs would certainly make her job easier. Giving teachers more advance notice on offerings (Suggestion 6) would also be more feasible if Maria limited the number of offerings. Fewer offerings would free some of her time to administer her programs. Georgia agreed to take responsibility for rallying the lower elementary teachers around this suggestion, and John agreed to help promote interest among the upper elementary teachers.

Figure 3.6
Measurement Map: Numbered Suggestions Showing Weighted Group Evaluations



There are problems associated with scheduling out for G/T students.

The group was also concerned by the number of suggestions that would have a high impact and be difficult to implement (Suggestions 2, 3, 5, and 9). They decided to see if other members of the Acorn Heights faculty were interested in tackling them.

Eamonn adjourned the meeting with a huge thanks and pizza. On the way back to his office, he thanked his lucky stars he had taken a "How to Solve Typical School Problems" workshop that enabled him to tackle such a sensitive issue with everyone's feelings still intact!

4
Developing a School Discipline Policy

THE SCHOOL IMPROVEMENT TEAM (SIT) AT CENTRAL HIGH WAS TWO months into the school year when they heard that people in the building were concerned about the inconsistent administration of discipline. Behaviors resulting in detention hours from some teachers were overlooked by others. Some classrooms seemed to self-monitor their behavior, while others sounded like outright anarchy. Some teachers and administrators took a problem-solving approach to discipline, but others fell just short of name-calling. The assistant principal's perceived physical approach to removing students from situations also caused an unvoiced liability concern.

The SIT consisted of administrators, teachers from all disciplines, parents, and student leaders. Even though the entire team was interested in the issue, they created a smaller study group to make recommendations to them. Mary Stearns, a technology prep teacher, suggested that the study group work to determine a positive, progressive discipline policy for the building.

Poking fun at Mary, Art Shaw, the assistant principal, said, "Give her a few more years here at Central and see how interested she is in 'positive discipline'!" Joy Lewiston, the principal, gave Art a sharp look and suggested that one outcome of the subteam's recommendations could be focused on positive, progressive discipline; but the group had not sufficiently studied the issue to determine whether one form of discipline was acceptable over another.

"Before assigning volunteers," Joy kidded, "let's make sure we've got a mix of the right kind of people for this

issue." Joy thought that the study group should include representatives from those responsible for discipline (faculty and assistant principals), those affected by discipline (students), those interested in discipline (parents), and outside experts. Since outside experts would cost the district too much money (any money was too much!), Judy Peterson, the school counselor with a list of every known counseling and psychology publication, was included. Based on the categories Joy suggested, the SIT formed the following group: Mary Stearns, technology prep teacher; Jake Elldridge, humanities teacher; Mark Bowens, math teacher; Judy Peterson, counselor; Art Shaw, assistant principal; Marissa Cummings, 12th grade co-op student and active in Junior Achievement; Matt Barnes, 10th grade student, above average, and active in sports; Ellen Szypanski, 11th grade parent; and Michael Vasilko, 10th grade parent.

First Meeting

As the team leader, Mark led the group in identifying the purpose and desired outcome:

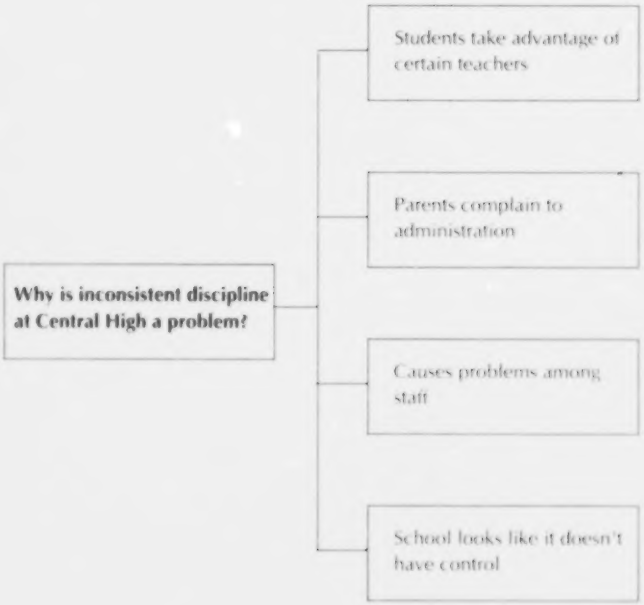
- Purpose: To study the problem of inconsistent discipline at Central High.
- Desired Outcome: One to three recommendations for a discipline policy at the school for presentation to the SIT.

Joy attended the first meeting and agreed with the team's purpose and desired outcome. She gave them the okay to proceed without her as a participant. After she left, the team began the generating phase of problem analysis. They started by addressing the question "Why is inconsistent discipline at Central High a problem?" To track the possible causes and help define tasks for the study group, Mark suggested they document their discussion with the help of a **Tree Diagram** (p. 56). In the far left-hand corner of a bulletin board, Mark wrote the question to help the group focus visually on the issue. They all admitted that talking could easily degenerate into griping about student and teacher actions in the classroom.

To generate information on the problem, Mark asked for reasons why inconsistent discipline is a problem at

Central High. He did this orally instead of using individual cards because of time constraints and the large number of participants. Mark posted the group's answers on cards on the bulletin board. The responses included "Students take advantage of certain teachers"; "You can get away with anything in Mrs. Mott's class"; "Parents complain to administration"; "School board members' kids get preferential treatment"; "Inconsistency causes problems among staff"; and "School looks like it doesn't have control." The group asked questions about several reasons and clarified the issues. The next step combined similar reasons into categories. Mark wrote the condensed categories on the board as the initial branches of a tree diagram (see Figure 4.1).

Figure 4.1
Tree Diagram: Initial Branches Showing Major Categories to Be Discussed


Why is inconsistent discipline at Central High a problem?
Students take advantage of certain teachers
Parents complain to administration
Causes problems among staff
School looks like it doesn't have control

Mark probed the team to determine the causes of the initial branches by asking "Why" for each branch: "Why is 'Students take advantage of certain teachers' a problem?" Standing next to the card labeled "Students take advantage of certain teachers," he pointed to it each time he asked, "Why else?" to help the team stay focused. To keep the responses flowing, Mark asked participants to briefly write down their answers on 4" × 6" cards after saying them aloud. Jake posted them on the bulletin board as the second level of branches on the tree. By continuing to ask, "Why else?" until no more logical answers surfaced, Mark helped the team construct larger branches. By continuing to ask, "Why?" for each card on a branch, the team completed a full tree (see Figure 4.2).

By the end of this activity, the team was tired and irritable, so Mark suggested they stop for the day and continue their work at the next meeting. Art said he would ask Janice Susterkl, the school secretary, to transcribe the notes off the bulletin board and distribute copies to the team within two days; the team agreed. Mark closed the meeting by explaining that next week's session would begin with sorting the information into controllable and uncontrollable issues.

One Week Later

Mark welcomed the team back and announced that Matt would be late. He removed the paper he had used to cover the cards from last week's completed tree diagram on the bulletin board then reviewed the purpose, desired outcome, and the first meeting's progress. Since the team was now in the scoping phase of problem analysis, which focuses on organizing the information gathered in the generating phase, he took great care to *not* ask if they had any additions to last week's data. Luckily, no one offered anything new. If someone had provided new information, Mark would have included it and pressed on with more "why" questions.

Mark asked the scoping question, "Which of these issues do you feel that Central High has some control over?" After allowing time for discussion about what issues were

Figure 4.2
Completed Tree Diagram

Why is inconsistent discipline at Central High a problem?
Students take advantage of certain teachers
Students don't respect them
Teachers don't expect it, so don't get it
Students don't know how to act respectfully
Students know what they can get away with
Street smart
Students live up to teacher's expectations
Parents complain to administration
Parents want someone to control their children
Want schools to do their parenting job
Parents perceive unfair treatment of their children
Gossip leads to miscommunication
Faculty expects some kids to fail
Parents looking for reasons to complain
Human nature
Parents don't want someone to control their children
Afraid they're not living up to their own responsibility
Causes problems among staff
Gossip in faculty lounge
Morale problems
Untrue information
Administration on faculty's case
Inconsistency makes administration look bad
Haven't set policy for implementation
Staff disagree about "appropriate" discipline
Some staff want classroom control
Some staff don't want classroom control
School looks like it doesn't have control
Bad PR
Sends message to students to "test" the school on discipline
May be able to get away with things
"Hot" community issue
"Control" a black-and-white issue

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controllable and uncontrollable, he drew a circle around those issues the team thought were controllable. Figure 4.3 shows the group's decisions.

Mark instructed the team to develop a problem statement by looking at the circled branches of the tree. He reminded the team that the problem statement may be a variation of one of the circled issues, a combination of the issues, or something different. Mark emphasized that they were still in the scoping phase, which often does not follow an analytical approach. Marissa volunteered that one problem was that if teachers don't expect good behavior, they won't get it. Mary followed up with a root cause: Even though Central High has an established student code of conduct, the staff has not had follow-up to implement it.

"Furthermore," Mary asked, "since how to deal with discipline problems is not clearly spelled out, how can teachers be expected to operate consistently?" Art said that follow-up on implementing the student code of conduct had occurred with some staff members.

At this point, Mark intervened in the emotionally charged issue by clarifying Mary's statement: "While there *has* been follow-up with certain staff members, we could affect student behavior by consistently defining how to discipline students and following up to ensure that we are implementing those discipline methods."

As Jake was writing the problem statement on the bulletin board, Matt walked into the meeting and jokingly remarked that he was pleased to see that the team hadn't hung the issue on the students. Art muttered something about it "always being administration's fault." Mark made a mental note to talk to Art after the meeting about how uncomfortable the team was with Art's negative comments.

Jake completed the problem statement and two root causes on the bulletin board: If teachers don't expect good behavior, they won't get it. Mark asked if there was anyone who didn't agree with the problem statement as Marissa defined it. He also asked if there was anyone who didn't agree with the two root causes: There is no follow-up on implementing the student code of conduct with the staff; and how to deal with discipline problems is not clearly spelled out (**Negative Questioning**, p. 64). Michael commented that perhaps the team had been a little too hard

Figure 4.3
Tree Diagram: Circled Branches Showing Controllable Issues

Why is inconsistent discipline at Central High a problem?
Students take advantage of certain teachers
Students don't respect them
Teachers don't expect it, so don't get it
Students don't know how to act respectfully
Students know what they can get away with
Street smart
Students live up to teacher's expectations
Parents complain to administration
Parents want someone to control their children
Want schools to do their parenting job
Parents perceive unfair treatment of their children
Gossip leads to miscommunication
Faculty expects some kids to fail
Parents looking for reasons to complain
Human nature
Parents don't want someone to control their children
Afraid they're not living up to their own responsibility
Causes problems among staff
Gossip in faculty lounge
Morale problems
Untrue information
Administration on faculty's case
Inconsistency makes administration look bad
Haven't set policy for implementation
Staff disagree about "appropriate" discipline
Some staff want classroom control
Some staff don't want classroom control
School looks like it doesn't have control
Bad PR
Sends message to students to "test" the school on discipline
May be able to get away with things
"Hot" community issue
"Control" a black-and-white issue

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on the parents when looking at the root causes. Mark refocused Michael by mentioning that the parents were defined as an "uncontrollable" issue, and the team wasn't pursuing the parent issue at this time. He asked Michael if he'd be willing to go with the problem statement as written. Michael agreed.

"So what needs to be done?" asked Mark.

"We need to talk to the staff to find out how they're currently handling discipline as it relates to the student code of conduct," said Mary. "Would anyone be willing to work with me on a survey to gather that information?" Mark offered his help, and Jake noted their commitment as an action item on a blackboard.

"What else needs to be done?" asked Mark. Marissa offered to get the students' perspective with the help of the student council.

"In addition, maybe we could use a survey in the *Central Dispatch*," volunteered Matt.

Mark asked, "Can you get Kathy Whitaker, the newspaper editor, to work with you?"

"Sure," said Matt.

"Well, since you invited me to be on this team for my vast resources," said Judy, "I'd be happy to contact other schools in the district and see what they're doing. But you'll have to wait until after the Homecoming Dance, because I don't have another minute until Homecoming's over!"

"How about in four weeks?" asked Mark.

"You've got it!" said Judy.

"Between Michael and myself," Ellen stated, "we should be able to talk to quite a few parents and get their perspective."

"Can you also get help from 11th grade parents, since we don't have an 11th grade representative on our team?" asked Mark.

"I'll get you some names," replied Judy.

"I'll talk to Joy and Andrea [a second assistant principal] and get their perspective on this inconsistent follow-up," said Art, "but they won't be too happy."

"So," said Mark, "we'll see you all four weeks from today. We have already come a long way. We finished analyzing the problem by agreeing on a problem statement, and we identified the root causes. We set plans to explore

solution options." He quickly reviewed each item on the action list, which Jake had documented on the blackboard, and the team members responsible for those items. He ended the meeting by thanking the team and telling them to feel free to call him with questions.

Five Weeks Later

Except for Judy, who had too much information to copy, team members sent copies of their research to the others (**Information Sharing,** p. 57) before the next meeting. Advance copies enabled the team to make the best use of the meeting time, when they could discuss issues rather than read them.

Mark opened the meeting by giving Judy 15 minutes to share her information; then the other team members shared their information. When Art wanted to ask a question, Mark reminded him that this was a simple reporting time; they could ask questions after all information had been shared.

After the team members had presented their information, Mark offered an opportunity to ask questions. To try to stem side conversations, he referred the team to the information-sharing ground rules. The meeting was spirited, with much information shared and clarified.

"Guess telling us how to play by the ground rules really works," said Ellen. "Think that has any implications for our students?"

Mark ended the meeting by asking everyone to continue reviewing the material they had just reviewed, keeping in mind a goal of developing a discipline strategy that would have the most impact on student and staff behavior.

Six Weeks Later

Before the next meeting, Mark developed a label for each of the two root causes: "Defining how to discipline" and "Following up with staff." Below each label, he listed recommended strategies drawn from the reading material and last week's discussion. Since a week of continued review had taken place, he allowed 10 minutes to ask

further clarifying questions. Before he started the next step, Mark offered an opportunity to make one-minute comments.

Mark decided to use a prioritization technique to rank each set of recommended strategies: one for determining the disciplinary system the group preferred and one for determining the follow-up guidelines (**Prioritization Techniques: Rank Order,** p. 59). Because open discussions had shown so much difference of opinion, Mark did not want to further polarize the group by using multiple vote, where all votes have the same weight. To clarify the voting procedure, Jake wrote on the blackboard a rating system: 4 = most effective system; 1 = least effective system. Before voting started, Mark encouraged participants to write down how they ranked the recommendations so they wouldn't forget how they voted.

The prioritization technique showed that the group agreed on how to follow up on implementing the student code of conduct; however, while most participants supported a positive, progressive discipline policy for behavior problems, Art and Michael were vocally polarized in their opinions. Art favored an autocratic discipline system, and Michael wanted a liberal system that sounded like no discipline rather than positive, progressive discipline. Since Art was a major political influence in the group, Mark sought to get his commitment on the recommendation.

In an effort to get Art to empathize with the rest of the team's recommendations, Mark asked Art, "Can you tell us why you think the rest of the team supports Recommendation B [positive, progressive discipline policy]?" Art accurately summed up the points.

"What concerns do you have that Recommendation B doesn't address?" asked Mark (**Negative Questioning,** p. 64). Art stated that the truly "bad eggs" would have a field day with that liberal discipline, and then he'd still end up being the heavy. He'd probably have 10 times the number of problems. Michael suggested that an autocratic approach with *some* kids might be appropriate.

Judy suggested that perhaps in cases where Art was concerned that the recommended policy wouldn't work for a particular student, she, Art, the parent, and the student could discuss a plan of action based on that student's

behavior (**A + B = C,** p. 64). Art was willing to accept the recommendation if this type of meeting was an option and a preliminary meeting between Art, Judy, and the teacher would take place before seeing the parent and student. He wasn't crazy about it, but he could live with it. Michael agreed, too.

Mark knew that Michael must accept the team's criteria for "positive, progressive discipline" for consistency. He asked Michael if he would be willing to try the team's suggested approach should the SIT accept it. Michael answered, "Yes."

Mark scheduled the next meeting, stating that he planned for them to format the recommendations for the SIT. He thanked the team for their involvement and stressed that by their commitment to dig deep into analyzing the problem, before jumping to solutions, they were solving the right problem. The team was excited about the recommendations for the SIT.

5
Selecting a Course Textbook

THE BUSINESS AND MANAGEMENT DEPARTMENT AT NORTHEASTERN Community College needed to select a new textbook for their Introduction to Business course. To help the department put together a team to make the selection, the curriculum committee used the following questions as guidelines: Who are our customers? Who are our economic users? Who has the technical expertise to help us? Who can act as a coach? Who needs to be involved? Even though four instructors taught the course, the committee thought that the team would be more effective if only two instructors plus several other stakeholders were included. The committee chose six people: Sally Henson, chairperson of the business and management department; Andre Alraz, 10-year instructor of the Introduction to Business course; Joe Wrangler, first-year instructor of the business course, with several years of teaching at other colleges; Barb Okstee, fourth-term management student; Wanda Horne, member of the college advisory committee; and Dave Smith, director of instruction for the college.

First Meeting

The curriculum committee chartered the textbook selection task force to select a textbook for the Introduction to Business course. Dave assumed the responsibilities of team leader. During the first meeting, he wanted to work through the problem-analysis stage; he opened the meeting by reviewing the team charter. Dave next attempted to get agreement on the desired outcome of the meeting: to agree

on a definition of the problem and the root causes. Several members questioned why they were only going to work on the problem statement, not on the solution. Dave explained that by spending the time now on problem analysis to agree on what the problem is, identifying solutions and committing to those solutions will be easier later. He reminded them of the Japanese phrase "When I go slow, I go faster." After a 10-minute discussion, the team agreed on the desired outcome that Dave had proposed and established ground rules on how they would conduct the meeting—all ideas are good ideas; everyone participates; one person speaks at a time; minimize side conversations.

To lead the team through the generating stage of problem analysis, Dave asked them to share their ideas of what was wrong with the current textbook. He used **Perception Sharing** (p. 48) to determine *if* a problem even existed with the textbook and materials.

To begin the discussion, Dave asked a series of open-ended, prompting questions: "What are your thoughts on the current selections?" "What have you heard others say?" "What have you noticed?" "How does it affect the students?" "How does it affect you?" "What's going on?" Participants responded using a polling process, a systematic approach that ensured that Joe and Sally, the quieter members of the group, had a chance to voice their perceptions. Their voices would easily have been lost in a "popcorn" approach— people speaking when the idea is hot. After going twice around the room, Dave allowed random thoughts— participants offering ideas when they thought of them. Since textbook selection was not a highly emotional issue, which sometimes requires time for people to vent, Dave decided to write the responses on a flip chart as they were given, rather than waiting until everyone had spoken. Figure 5.1 shows the team's comments.

In reviewing the responses, Dave noticed that some members were already jumping to solutions. The team first needed to agree that a problem existed with the current textbook then define what that problem was before they could agree on a solution. Dave did the right thing by recording these solutions during perception sharing. If he had stopped the group by saying, "No, that is a solution. We are just sharing perceptions of the problem," he could have

potentially shut down several members. But the generating ideas phase is intended to be a pouring out; team members weed through the list and sort problems in the next phase.

Figure 5.1
Perception Sharing: Problems with the Current Textbook

No software to accompany text
Texts are too expensive
Cases are outdated
Graphics are not up-to-date
Books are too expensive
SouthWestern has a wonderful text for $35
Students must buy study guides with text
Lousy instructors' manual
Hard to read
Hard looking up information
Irwin is the best to buy
Let's buy the Irwin text
SouthWestern has great transparencies
Too focused on small business
Need more on teamwork
I have some promotional material from Addison-Wesley
Need more on being effective employee
Not enough global examples
There is no problem
Lousy cases

When the ideas stopped coming, Dave closed the generating phase by asking if all the ideas had been heard; affirmative nods from all members solidified agreement. He asked if the group agreed that a problem existed. Andre did not feel there was a problem—he had been using the current book for many years, and he felt it was fine. Dave asked him to look at what the other people thought. Could Andre agree that a problem existed for *some* people? Andre and the rest of the team agreed that yes, there were problems with the current textbook. The generating phase was finished; the team had shared perceptions of the problem and agreed that a problem existed.

They were ready to move into the scoping phase to clarify, sort, and combine ideas. Dave read each idea, asking if anyone had questions on what it meant. Going over each idea validated it for everyone and slowed the group down to ensure they were looking at each for clarity. If a team doesn't clarify the ideas in this phase, the process may be disrupted later, and the team may have to go back to the

scoping phase to clarify meanings. A team may also add ideas during this activity.

After the team reviewed and clarified the ideas, they were ready to organize them. Wanda mentioned that some ideas were answers to the problem, not statements of the problem. Dave suggested that the group do a quick **Sorting** (p. 57), using "problem" and "solution" as the two categories. He asked if each idea was a problem or a solution and wrote *P* or *S* next to it. Because he didn't want to lose the solutions (or offend the people that offered them and maybe lose their participation), Dave asked Barb to write them on a flip chart entitled "solutions." While Barb was writing this list, Andre was writing a list of the problem ideas on a flip chart entitled "problems." The rest of the group took a quick stretch break.

Focusing on the problems list, Dave asked if any ideas were similar and could be combined. He circled these ideas with the same color marker. After the obvious ones were combined, he read each idea and asked if it could be combined or put in a category with another idea. This was a slow process, needing more idea clarification. Dave followed the guidelines for combining and categorizing ideas: An idea can stand alone; if participants disagree over whether an idea should be combined, the author of the idea has the final say. Figure 5.2 shows how the team grouped the ideas under four categories: supplementary materials, cost, textbook itself, and contents/focus.

Figure 5.2
Categorizing Problems with the Current Textbook

SUPPLEMENTARY MATERIALS
Students must buy study guides with text
Lousy instructors' manual
No software to accompany text

COST
Texts are too expensive
Students must buy study guides with text
Books are too expensive

TEXTBOOK ITSELF
Cases are outdated
Graphics are not up-to-date
Lousy cases
Hard looking up information
Hard to read

CONTENTS/FOCUS
Too focused on small business
Need more on being effective employee
Not enough global examples
Need more on teamwork

The team next needed to agree on what the problem was and where to focus. Participants heatedly disagreed over which of the four categories was the most important. Dave emphasized that they did not have to select one of the categories and forget the others. All four might be problems that require attention. He asked each team member to write down a response to the question "What's the real problem?" They shared their thoughts on what the real problem was and agreed on the following problem statement: Our textbooks and materials are outdated. No one had written this statement down—it was developed through combining several written thoughts. Dave carefully checked to make sure everyone agreed on the problem statement by getting affirmative nods.

In the closing phase in problem analysis, the task is to identify the causes of the problem; the team needed to agree on one to two root causes. To take a deeper look, Dave selected the tools **Series of Why Else** (p. 65) and **Series of Why** (p. 66). While everyone enjoyed a break, he and Sally posted the flip chart pages they'd used on the side walls so that a large blackboard was available for writing down responses. He brought in Bill, an outside person who was neutral on the topic, to act as the recorder.

At the top of the blackboard, Dave wrote the main question, "Why are our textbooks and materials outdated?" and encouraged the team to respond. Bill recorded the first response: "10 years old."

Dave asked, "Why else," and Bill recorded the second response: "outdated to begin with." Dave asked "why else" questions to "go broad," that is, to look at the breadth of the causes. Bill recorded the "why else" responses under the main question in a horizontal row across the top of the board.

After the broad responses were solicited, Dave selected one of them to "go narrow." He chose "10 years old," asking, "Why are our textbooks 10 years old?" The first response was "haven't bought new ones in 10 years." Dave quickly asked, "Why haven't we bought new ones in 10 years?"—the response was "didn't see a need." For each response, Dave asked "why," and Bill recorded it, forming columns that ended when the team ran out of answers or when the answers turned nonsensical. Figure 5.3 shows the recorded responses.

Figure 5.3
Responses to "Why" and "Why Else" Questions

Why are our textbooks and materials outdated?

10 years old
Haven't bought new ones in 10 years
Didn't see a need
Happy with status quo
Didn't know what else was out there
Didn't look around
In past, happy with the status quo*
Outdated to begin with
Publisher behind the times
Overconfident
Been our textbook representative for 25 years
Haven't looked elsewhere
In past, happy with the status quo
Haven't bought new ones
No process in place***
Always go with same publisher
We don't look around
In past, happy with the text
Haven't seen need***
Few complaints
Not worth it to students
Only one semester
Business world is changing
Changes in technology and information
More resources and changing resources
Changes in technology**

* Team leader stopped asking "why" questions because the last answer cycled back to an earlier response in the same column.

** Team leader stopped asking "why" questions because the team was not getting anywhere.

*** Recorded as separate chutes because of two responses to "Why haven't we bought new ones?"

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The team next looked for recurring themes, which are often found near the bottom of the columns. They found the theme "we didn't look elsewhere," and Dave circled the appropriate response in each column. Using the series of why tool enabled the team to get beyond the surface causes at the top of the columns and dig down to the root cause. Before concluding for the day, the team agreed on the problem statement: The textbook and materials are outdated; and on the root cause: We didn't look elsewhere for the textbooks. He asked that they come to the next meeting with ideas on different textbooks that were available.

During the next week, Dave updated the curriculum committee on the team's progress and discussed the problem statement with them. Nothing is more frustrating than to hear an administrator say, "No, that's the wrong answer," after a team has spent weeks or months analyzing a problem and developing solutions. Periodically updating the administration who chartered your team and asking, "Are we headed in the right direction?" may prevent frustrations later.

One Week Later

When the team reconvened, Dave had written the team's charter, the problem statement, and the root cause on flip charts in the front of the room:

- Charter: To select a textbook for the Introduction to Business course.
- Problem Statement: The textbook and materials are outdated.
- Root Cause: We didn't look elsewhere for the textbooks.

This was a big help in providing focus. The team decided that the desired outcome for this session was to agree on a textbook that they were willing to support and purchase. They agreed to use the same ground rules from the last meeting.

The team was beginning the generating phase of solution identification, where they needed to agree that all solution options had been identified. Dave decided to use

Flip Chart Brainwriting (p. 52). Since this was a late afternoon meeting and the potential for sleepiness was high, Dave wanted people on their feet and actively participating. Instead of writing their ideas down on pieces of paper, Dave planned to have the team write on three flip charts positioned around the room. He had written "Possible Introduction to Business Textbooks" at the top of each chart. Dave reviewed and posted the brainstorming guidelines: Ask questions only to clarify; piggyback ideas if possible; think creatively, looking past the obvious; and passing is okay. He divided the team into groups of two so that each flip chart had the same number of people. Each group wrote down three ideas for textbooks on a flip chart. The groups moved to the next flip chart, which already had a group's ideas on it, and wrote down three more textbooks. They continued this rotation one more time until each group had written on all three flip charts.

Dave moved the charts to the front of the room so everyone could review them. He next asked if anyone had more ideas to add; the team agreed that all options had been identified.

With this agreement in place, the team was ready to move into the scoping phase. They clarified the listed textbooks to ensure that everyone knew which textbook was intended by the written statement, and they combined the duplicates. The next step was to evaluate the textbooks.

The group first needed to establish criteria for evaluating. Dave decided to generate a criteria list by orally brainstorming the group. Notice that this is a generating phase within the scoping phase. In the overall problem-solving process, the team is in the organizing (scoping) phase of solution identification. Within this phase, they are generating a list of criteria to help in evaluating the textbooks. After generating this list, they will need to organize the list and narrow it. A key point in problem-solving is that within each of the generate-organize-close phases, there is often a "mini" generate-organize-close series of phases.

Once the list of criteria was generated, the team organized it, clarifying and combining ideas. They prioritized the criteria by conducting a multiple vote (**Prioritization Techniques: Multiple Vote**, p. 59); the

results are shown in Figure 5.4. The team agreed to use the four criteria receiving the highest number of votes to evaluate the textbooks, thus closing this series of miniphases.

Figure 5.4
Prioritization Technique: Results of Multiple Vote

	Number of Votes
Current in-depth case studies	𝍸
Global examples throughout	𝍸
Excellent teacher-support materials (lecture outlines, overheads, test bank, group exercises)	𝍸
Up-to-date graphics	0
Student software to accompany	III
Low cost	0
Excellent study guide	0
Easy to read	0

The next step was to put the criteria and textbooks into a **Matrix Diagram** (p. 62). Column 1 showed the textbook options, and the headings for Columns 2 through 5 listed the four criteria (see Figure 5.5). Once they had the skeleton of the matrix designed, Barb brought up that they didn't have enough information to go any further. She thought that to rate the textbooks against these criteria, she would need to know more about them. Prior to this meeting, she hadn't even heard of four of them. The team decided that their time would be better spent researching the books individually rather than as a group. They divided the list of textbooks, assigning books to each team member, who agreed to contact the publisher to obtain preview books and materials. These would be kept in a specified location in the faculty office for the team to preview before the next meeting in two weeks. Dave reviewed the agreements they had reached during this meeting then adjourned it.

Obviously at this meeting, the team was not going to reach their desired outcome: to agree on a textbook they were willing to support and purchase. Not meeting a desired

outcome should not be viewed as a failure. The team needed to keep their desired outcome in mind and choose the most effective path to get to that outcome. The quality of their decision will be far greater if they take the time to research all options. With the time pressures facing most work teams, it takes a lot of courage to take time out for more research. But in the end, the team will save time by thoroughly investigating all options; they will be more committed to their final decision; and the solution will be implemented more rapidly. Most of us can remember decisions that have never been implemented because of a lack of commitment.

Figure 5.5
Matrix Diagram: Framework to Evaluate the Textbooks

Text Option	CRITERIA			
	Global Examples	Teacher-Support Materials	Student Software	Current In-Depth Case Studies
Introduction to Business				
The Business World Today				
Principles of Business				
Essentials of Business				
Business in the 21st Century				
Business Principles				
The World of Business				

Three Weeks Later

When the team reconvened, they agreed upon their desired outcome for the meeting: to agree on a textbook they were willing to support and purchase. Once again, the ground rules were reviewed and agreed upon. Dave had prepared a large framework for the matrix diagram and posted it at the front of the room. The first task was to fill in the cells with "H" (high), "M" (medium), or "L" (low). Dave explained that they would never completely agree on how each textbook should be rated for each criterion. They would, however, develop the ratings matrix so that each team member could live with it and support it. They discussed each cell and went with the majority on what to rate "H," "M," and "L." If there was strong disagreement, Dave encouraged all members to voice their opinions and hear each other's concerns over the ratings being discussed. After much discussion, the team completed the matrix (see Figure 5.6).

The team assigned numerical values to the letters: "H" = 9, "M" = 3, "L" = 1. They filled in the matrix diagram, using numbers for the letters, and totaled the points for each textbook (see Figure 5.7). *Business in the 21st Century* received the highest number of points by a large margin. Dave asked the group to step back and do a "reality check." Did this selection make sense? Remember—the team was still in the organizing phase, attempting to organize and evaluate the options.

Many groups fall into the trap of assuming that the highest numerical winner is always the option to select. The matrix diagram is a scoping tool. Other success factors in making the matrix work are to ensure that the team agrees on the criteria and that the criteria mean the same thing to all participants. An example of this not occurring involved a team that was rating job candidates using the matrix diagram. They could not agree on how to evaluate a candidate's communication skills. One team member rated the candidate "high," while another one rated him "low." Through discussion, they learned they had different interpretations of the criterion "communication." The person rating the candidate "high" was judging his presentation skills. The person rating him "low" felt the

Figure 5.6
Matrix Diagram: Rating the Textbooks Using "H," "M," and "L"

Text Option	CRITERIA			
	Global Examples	Teacher-Support Materials	Student Software	Current In-Depth Case Studies
Introduction to Business	H	L	M	M
The Business World Today	M	M	M	H
Principles of Business	H	M	L	H
Essentials of Business	M	H	L	M
Business in the 21st Century	H	H	H	M
Business Principles	L	M	M	L
The World of Business	M	L	H	M

Note: "H" = high, "M" = medium, "L" = low.

candidate was full of hot air and trying to breeze through the interview with canned responses.

The textbook task force was satisfied with the results of the matrix diagram. Dave sensed that they felt that *Business in the 21st Century* was the best selection. To enter the closing phase, Dave used **Negative Questioning** (p. 64) by asking, "Who cannot live with recommending *Business in the 21st Century* as our Introduction to Business textbook?" Sally raised her hand and expressed concern over the publisher, who had been difficult to work with in the past.

Dave listened and asked, "What would it take for you to be comfortable with recommending *Business in the 21st Century* to the curriculum committee?" (**Trial Close**, p. 65). Sally said she would like to have an alternate textbook in

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case the publisher was still difficult to work with. The team agreed, and they selected *Principles of Business* as the alternate textbook.

When Dave presented the textbook recommendation to the curriculum committee, there were no surprises, because he had regularly updated them on the task force's progress. He spent five minutes explaining the process and criteria the team used. The committee voted to accept the task force's recommendation, and *Business in the 21st Century* is now being used as the Introduction to Business textbook at Northeastern Community College.

Figure 5.7
Matrix Diagram: Rating the Textbooks Using Numerical Values for "H," "M," and "L"

Text Option	CRITERIA				
	Global Examples	Teacher-Support Materials	Student Software	Current In-Depth Case Studies	Total
Introduction to Business	9	1	1	1	16
The Business World Today	1	1	1	9	18
Principles of Business	9	1	1	9	22
Essentials of Business	1	9	1	1	16
Business in the 21st Century	9	9	9	1	30
Business Principles	1	1	1	1	8
The World of Business	1	1	9	1	16

Note: "H" = 9, "M" = 1, "L" = 1.

6
Putting It All Together

IN THE THREE CASE STUDIES, THE DIFFERENT TEAMS USED THE problem-solving process to solve scheduling for G/T students, to develop a school policy for positive discipline, and to select a college textbook. In the *generating phase* of problem analysis, the team leader solicited perceptions of the problem. The perceptions were organized in the *scoping phase*, where the teams reached agreement on what the problem was. In the *closing phase*, the teams reached agreement on the root causes of the problem.

Once the problem and root causes were identified, the teams were ready to begin the solution identification stage. The *generating phase* produced solutions using break-time brainwriting and brainstorming at Acorn Heights Elementary School; information sharing at Central High School; and flip chart brainwriting at Northeastern Community College. The teams sorted and organized the ideas in the *scoping phase* and reached agreement on the solutions they were willing to support and implement in the *closing phase*.

The process of analyzing the problem then identifying solutions, using the generating-scoping-closing phases, may take 10 minutes, 10 days, or 10 months. Remember to work through each phase. Don't take shortcuts! By going slower (to go faster later), especially in the problem-analysis stage, you will make sure you are solving the right problem and that the team agrees on the action plans.

Each problem-solving issue and each problem-solving session is different. As a team leader, you will need to determine your strategy and select the tools based on the issues, people involved, time limitations, history of the problem, and the problem-solving environment.

Good Luck!

The Tools of Problem-Solving

THIS SECTION OF THE BOOK DESCRIBES THE PROBLEM-SOLVING TOOLS and explains when and how to use them. The instructions for a tool should be reviewed by the team leader with the team before a tool is used. Please remember that problem-solving in teams is a collaborative effort, with both the leader and the team members responsible for achieving the desired outcomes.

The table below lists the tools in order of difficulty from easier to complex in the phase most appropriate for their use. The "Text Reference" column will help you find the tools in the case studies.

PHASE	PROBLEM-SOLVING TOOL	TEXT REFERENCE Chapter	Page
GENERATING	Perception Sharing	5	33
	Nominal Brainstorming	3	16
	Popcorn Brainstorming	3	16
	Brainwriting		
	Break-Time Brainwriting	3	16
	Flip Chart Brainwriting	5	39
	Silent Flip Chart Brainwriting		
	Affinity Diagram	3	11
	Tree Diagram	4	22
SCOPING	Information Sharing	4	29
	Sorting	5	35
	Prioritization Technique: Multiple Vote	5	39
	Prioritization Technique: Rank Order	4	30
	Relations Diagram	3	14
	Matrix Diagram	3,5	17, 40
	Measurement Map	3	19
CLOSING	Negative Questioning	4,5	26,30,43
	A + B = C	3,4	14,31
	Trial Close	5	43
	Series of Why Else	5	36
	Series of Why	5	36

PERCEPTION SHARING

What Is It?

Perception sharing is oral questioning to help perceptions, ideas, and opinions surface. This tool gives team members an opportunity to express their perceptions of a situation, how they feel about it, and how the situation affects them.

When Do We Use It?

- When a team is in the generating phase of problem-solving
- To help determine if a problem exists and to hear how other team members feel about the issue

How Do We Use It?

1. Emphasize that perceptions are not right or wrong; they simply exist.
2. Do not let participants challenge others' perceptions.
3. Ask the following questions to help all questions surface:

- *What do you think about it?*
- *How does it feel to you?*
- *What have you heard others say?*
- *What have you noticed?*
- *How does it affect you? Others?*
- *What's going on?*

4. Decide whether to record the responses immediately or let people air their feelings before writing anything down. In a situation where people need to vent, a team leader would be wise to give team members one minute to voice their perceptions, going around the room. After the initial sharing, the leader says, "Now that we've heard everyone's initial perceptions on the issue, let's jot down some of the ideas we heard." Waiting to record ideas gives everyone a chance to speak freely and say things they may hesitate to say if the ideas are written down from the beginning.

NOMINAL BRAINSTORMING

What Is It?

Brainstorming generates and collects ideas quickly from a group.

When Do We Use It?

- When a need exists to
  - ◊ Draw out reluctant participants
  - ◊ Minimize influence of overeager dominant participants
- To seek creative idea-generation
- To solicit input from *all* team members

How Do We Use It?

1. Explain the procedure and the guidelines to gather ideas (see Step 6).
2. Present the problem, which is best if phrased as a question; or ask the group to define the problem.
3. Allow time for participants to think.
4. Solicit ideas from participants by order of seating.
5. Write ideas on a flip chart or board.
6. Follow these guidelines to gather ideas:
   - Ask questions only to clarify.
   - Piggyback ideas if possible.
   - Think creatively, looking beyond the obvious.
   - Passing is okay.
7. Clarify the ideas. Combine obvious duplicates. The author of an idea has the final say on whether it should be combined.
8. After two turns around the group, open the discussion to any participants for ideas that may have been missed.

POPCORN BRAINSTORMING

What Is It?

Brainstorming generates and collects ideas quickly from a group.

When Do We Use It?

- When a need exists to
  - ◊ Keep the energy level high
  - ◊ Capture *many* ideas quickly
- When *no* need exists to encourage participation or minimize disruptive behavior
- To seek creative idea-generation
- To solicit input from team members

How Do We Use It?

1. Explain the procedure and the guidelines to gather ideas (see Step 6).
2. Present the problem, which is best if phrased as a question; or ask the group to define the problem.
3. Allow time for participants to think.
4. Randomly solicit one idea at a time. Listen to all ideas and help less vocal participants express their ideas.
5. Write ideas on a flip chart or board.
6. Follow these guidelines to gather ideas:
   - Ask questions only to clarify.
   - Piggyback ideas if possible.
   - Think creatively, looking beyond the obvious.
   - Passing is okay.
7. When the flow of ideas slows substantially, ask if the group has any more ideas before closing the activity.
8. Clarify the ideas. Combine obvious duplicates. The author of an idea has the final say on whether it should be combined.

Note: Two recorders may be needed to keep up with the pace of ideas.

BRAINWRITING

What Is It?

Brainwriting generates and collects ideas quickly from a group. There are three variations: break-time brainwriting, flip chart brainwriting, and silent flip chart brainwriting.

When Do We Use It?

- When a need exists to
  - ◊ Limit self-censorship or peer group pressures
  - ◊ Build on or create awareness of others' ideas
- To seek creative idea-generation
- To solicit input from team members

How Do We Use It?

1. Define the problem or opportunity. Begin the problem statement with "How to."
2. Write the statement at the top of a blank sheet of paper.
3. Following the guidelines for brainstorming, write three ideas for solving the problem on your sheet of paper.
4. Pass your paper to the person on your right, who adds three additional ideas, building upon the preceding ones.
5. Continue this activity until each sheet contains 15 ideas or until the team exhausts all ideas.
6. Pass the paper to the right again.
7. Choose the three ideas that you like best and write them on the bottom of the paper. Fold the paper so that others cannot see your choices.
8. Pass the paper to the right again; the next person chooses three ideas and folds the paper again so that the choices cannot be seen. Continue this activity one more time so that three people have written their choices on each paper.
9. Pass the paper again.
10. Tally the votes on your sheet to determine the best ideas on that sheet.
11. Record the best ideas on a flip chart, discuss them, and reach a consensus.

Note: Steps 6 through 10 may be skipped if the group thinks the steps can be done orally.

BREAK-TIME BRAINWRITING

What Is It?

Break-time brainwriting is a brainwriting variation.

When Do We Use It?

- When a need exists to
  - ◊ Solicit ideas without a meeting
  - ◊ Build on or create awareness of others' ideas

How Do We Use It?

1. Write on the top of a large sheet of paper the directions for soliciting ideas:
   - State *who* is soliciting the information and *why* they're seeking it.
   - Length of time participants will have to respond.
   - No names are necessary.
   - Brainwriting paper should remain in the room where breaks are taken.

2. Define and write the problem or opportunity on the paper, using large print.

3. Secure the paper and a pen to a table next to a coffee or soft drink machine. Do not place the paper under a coffeepot or it may become a placemat.

4. Retrieve on the due date and process the information.

5. Summarize the results and post in the break room.

FLIP CHART BRAINWRITING

What Is It?

Flip chart brainwriting is a brainwriting variation.

When Do We Use It?

- When a need exists to
  - ◊ Change the scenery from sitting
  - ◊ Increase the energy level in a room
  - ◊ Build on others' ideas
  - ◊ Increase discussion and camaraderie in a room
- To seek creative idea-generation
- To solicit input from team members

How Do We Use It?

1. Define the problem or opportunity. Begin the problem statement with "How to."
2. Write the statement at the top of two to four flip charts that are positioned around a room.
3. Divide the team into small groups so that each flip chart has an equal number of people.
4. Following the guidelines for brainstorming, write three ideas for solving the problem on a flip chart; move to the next flip chart and repeat the activity.
5. Continue until each chart contains 15 ideas or until the groups exhaust all ideas.
6. Clarify the ideas. Combine obvious duplicates. The author of an idea has the final say on whether it should be combined.

SILENT FLIP CHART BRAINWRITING

What Is It?

Silent flip chart brainwriting is a brainwriting variation. It is similar to flip chart brainwriting. The main differences are that the ideas are recorded individually (not in groups) and in silence.

When Do We Use It?

- When a need exists to
  - ◊ Change the scenery from sitting
  - ◊ Increase the energy level in a room
  - ◊ Build on others' ideas
  - ◊ Limit self-censorship and peer group pressures
- To seek creative idea-generation
- To solicit input from team members

How Do We Use It?

1. Define the problem or opportunity. Begin the problem statement with "How to."
2. Write the statement at the top of flip charts that are positioned around a room.
3. Direct participants to follow the guidelines for brainstorming and to write one idea for solving the problem on a flip chart; then move to the next chart and repeat the activity.

4. Ask participants to write their responses in silence in an effort to avoid evaluating responses.

5. Continue until the team exhausts all ideas.

6. Clarify the ideas. Combine obvious duplicates. The author of an idea has the final say on whether it should be combined.

AFFINITY DIAGRAM

What Is It?

An affinity diagram gathers large amounts of information, such as ideas, opinions, perceptions, and alternatives, and organizes them into categories. This tool is an excellent way to help a group "break out of the box" and think creatively.

When Do We Use It?

- When facts or thoughts are in chaos and oral communication may lead to losing focus
- To expand thinking beyond typical ideas

How Do We Use It?

1. Define purpose of affinity diagram. Write the problem (if used to look at problems) or opportunity (if used to generate solutions) question on a flip chart or board.

2. Record ideas on cards.

   - State one idea per card, writing clearly.
   - Use no more than seven words per card.
   - Don't worry about spelling errors.

3. Clarify ideas orally, allowing one minute per idea.

4. Combine similar ideas in silence, a quick process. Don't force a card into a category. Loners are okay.

5. Label the categories. Look for one card in each grouping that captures the essence of the group, and use it as a category title. If one doesn't exist, make a card, and place it at the top of the grouping.

6. Limit the number of titles to less than 10 for optimum success.

7. Clarify combining. Author has the final say.

Example of an Affinity Diagram

Why do buses arrive late to school?

ROAD CONDITIONS	BUSES	DRIVERS
Weather	Bus too old	Don't drive fast enough
Poor city plowing	Bus not maintained	Can't control rowdy kids
Unpassable roads	Condition of buses	Poor driving ability
Poor maintenance of roads	**STUDENTS**	Drivers don't care if late
ROUTES	Late to bus stop	Drivers not punctual
Too many stops	Too many per bus	
Illogical routing	Too rowdy on bus	
Routes too long	Punctuality	
	Young kids take longer	

TREE DIAGRAM

What Is It?

A tree diagram systematically maps out the causes of a problem or detailed actions that are needed to achieve a goal. This tool maps out options; it does not evaluate them.

When Do We Use It?

- To explore possible causes of a problem
- To break a broad objective into specific paths to follow or tasks to perform

How Do We Use It?

1. Agree on a goal, problem statement, or question.
2. Write the goal, statement, or question on the left side of a large board.
3. Ask for and record all possible causes and tasks on 4" × 6" cards, one per card.
4. Mount the cards so that all team members can see them, such as on a bulletin board or wall.
5. Clarify ideas orally.
6. Combine similar ideas into categories. Write these categories on the board as the initial branches of a tree diagram.
7. Complete the tree diagram by adding branches. Ask questions such as the following to help:
   - *Why would this happen?* Use when a team needs to identify a root cause.
   - *What could cause this?* Use when a team needs to identify a root cause.
   - *What must we do to accomplish this goal?* Use when a team needs to identify tasks and actions.
8. Record each response on a card and post the card on the board.
9. Continue asking questions until the team has identified all tasks or causes.
10. Review each path to ensure that there are no omissions and to check the logic of a sequence.
11. Ask the following questions to help reach a goal:
    - *Will these actions lead to this next action?*

- *If we want to accomplish this goal, do we really need to do this task?*

Note: Please see p. 58 for a tree diagram example.

INFORMATION SHARING

What Is It?

Information sharing is a written or oral tool to share information gathered during research.

When Do We Use It?

- To update a team after they have taken time (hours to months) to further gather, organize, or analyze data

How Do We Use It?

1. Allow time for individual or subteams to present information.
2. Follow these ground rules:
   - Establish realistic time frames for sharing information.
   - Be brief in an oral presentation. Don't recite all the data—summarize.
   - Send detailed information in advance to participants so that they can come to a meeting prepared to ask questions and make comments.
   - Hold most questions until the end of the information- sharing process.
   - Summarize key points for team members.

SORTING

What Is It?

Sorting is often used after idea-generation to sort ideas into two categories, such as the following:

- Cause and effect
- Problem and symptom
- Want and need
- Short term and long term

Example of a Tree Diagram

BEST COPY AVAILABLE

- Issues *we* can work on and issues to pass on to others

When Do We Use It?

- To narrow a list of ideas on problems
- To identify areas on which to concentrate

How Do We Use It?

1. After all ideas have been listed, agree on how they will be sorted. To keep the group focused, write the sorted categories down.
2. Using colored markers, circle the ideas for each category; move the large idea cards into categories; or list the ideas by category on a flip chart.

PRIORITIZATION TECHNIQUES

What Is It?

Prioritization techniques rank issues and alternatives. Two types are multiple vote and rank order.

Multiple Vote

- All votes have the same weight.
- Only one vote per item is allowed.
- Each team member may vote for more than one item.

Rank Order

- Votes are weighted.
- Only one vote per item is allowed.
- Each team member may vote for more than one item.

When Do We Use It?

- To identify key concerns, issues, or solutions

How Do We Use It?

1. Agree on a prioritization technique: multiple vote or rank order.
2. Post the list of items to be ranked.
3. Determine the number of items each person can vote for by dividing the total number of items by 3. Round up if necessary.
4. Follow the steps for the prioritization technique you chose.

Multiple Vote

1. Agree on the criteria for the rating system; for example, most likely and least likely; most costly and least costly.
2. Write down your votes.
3. Record the votes using one of the following methods:
   - Read each item from the posted list and record a tick mark for each vote that an item received.
   - Give your paper showing your votes to the team leader to tally.

Rank Order

1. Select a ranking system. For example, if each person is selecting four items, the weighting system could be 4 = most important; 3 = second most important; 2 = third most important; and 1 = fourth most important.
2. Write the ranking system on a flip chart.
3. Write down your votes.
4. Record the votes using one of the following methods:
   - Read each item from the posted list and record the ranking numbers that each item received.
   - Give your paper showing your votes to the team leader to tally.

Note: Prioritization techniques are designed to see what falls out—what's important to people and what's not. Do not fall into the trap of assuming that the item with the largest number of votes "wins." This tool is a prioritization technique, not a decision-making tool.

RELATIONS DIAGRAM

What Is It?

A relations diagram determines which ideas or issues are the driving forces, or those having the greatest impact on the other issues.

When Do We Use It?

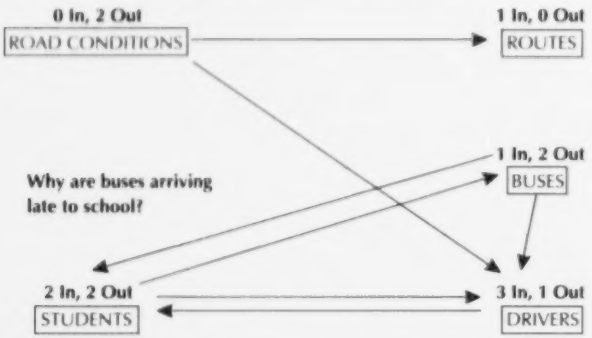
- When you have identified all issues and need to identify the most important ones
- When the issues are complex and the relationship between ideas is difficult to determine

- To determine cause-and-effect relationships that show which issues drive other issues

How Do We Use It?

1. Agree on a definition of the problem or identification of the issue.
2. Record the problem statement in the corner of a wall, flip chart, or large card.
3. Remove the category cards from an affinity diagram or use the ideas from brainstorming and place or write them around the problem statement, allowing space under them to put the idea cards.
4. Arrange the idea cards under the appropriate category cards if needed for clarity.
5. Take one category and evaluate if a causal relationship between it and each of the other categories exists. Draw a line between cards, using arrows to indicate cause and effect. Arrows point away from cards that are causal issues and point to cards that are affected by a causal issue.
6. Move clockwise from card to card.
7. Total the arrows going to and away from each card, and write the totals above the card.
8. Cards with a high number of arrows going to them are key issues or ideas. Cards with a high number of arrows going away from them are driving forces or causal issues.

Example of a Relations Diagram



Note: "Drivers" is the key issue; "students" is a secondary key issue. "Students" and "buses" are driving issues.

MATRIX DIAGRAM

What Is It?

A matrix diagram shows the relationship between variables. These variables can be characteristics, tasks, evaluation criteria, or organizational functions. The matrix answers two questions:

- Does a relationship exist between the variables?
- If so, how strong is the relationship?

When Do We Use It?

- To compare, organize, and show a relationship among sets of data, such as allocating tasks, evaluating products or services, or prioritizing a set of plans based on evaluation criteria.

How Do We Use It?

1. Agree on the variables you want to compare for interrelationships. They may be generated from the branches of a tree diagram or from a brainstormed list.
2. Place the items you want to compare in Column 1 of the matrix. Place the variables as headings for the remaining columns.
3. Agree on the prioritization symbols to be used. For example, H = high positive relationship; M = medium positive relationship; L = low relationship; – = no relationship. Numbers can also be used. For example, 9 = high; 3 = medium; 1 = low; 0 = no relationship.
4. Complete the matrix, using the prioritization symbols you've selected.

Example of a Matrix Diagram

	TEXTBOOK CRITERIA				
Textbook Option	Appropriate Reading Level	Clear Directions	Use of Current Examples	Good Use of Visuals	Total
A	9	3	3	1	16
B	3	3	9	3	18
C	9	3	9	9	30
D	1	3	1	3	8

Note: A = *The World Around Us;* B = *Where in the World is . . .;* C = *Our Big World;* D = *Knowing Our World.*

MEASUREMENT MAP

What Is It?

A measurement map plots possible solutions on a visual grid, showing the relationship between *ease of implementation* and *impact*.

When Do We Use It?

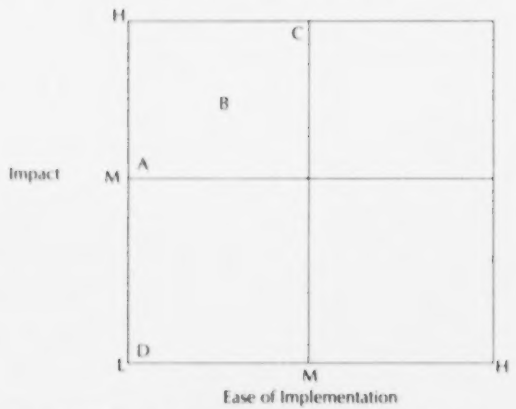
- When we have identified solutions and the resources needed to implement the solutions
- To determine the priority of the solutions

How Do We Use It?

1. Draw a measurement map: Show *ease of implementation* on the horizontal axis and *impact* of the problem on the vertical axis.
2. Write the problem statement at the top of the map.
3. Draw horizontal and vertical grid lines to show low, medium, and high.
4. If you have not already done so, rate each solution option as high, medium, or low for *ease of implementation* and for *impact*.
5. Plot each solution.

Example of a Measurement Map

The social studies text is outdated.



Note: A = *The World Around Us;* B = *Where in the World is . . .;* C = *Our Big World;* D = *Knowing Our World.*

NEGATIVE QUESTIONING

What Is It?

Negative questioning asks questions in a negative form. Team members may be more likely to raise concerns if they are asked negative questions (ones that contain *not*) rather than positive questions, which often result in uncommitted head nods.

When Do We Use It?

- When a consensus is needed
- To clarify a list to see if anyone has questions

How Do We Use It?

1. When reviewing a list of ideas or proposals, ask the following types of questions:
   - *Who does not understand what is meant by Idea A? Idea B?*
   - *Who does not agree with Idea A?*
   - *Who cannot live with Proposal A?*
   - *Are there any alternatives up here you cannot live with?*

2. If the team has no responses, say, "So we all agree that each of you can live with any of these alternatives."

A + B = C

What Is It?

A + B = C combines two options.

When Do We Use It?

- When we are in a closing phase
- To avoid an either/or situation

How Do We Use It?

Ask the following questions:

- *Must we decide between the two options?*
- *Can we combine them?*
- *Can we try them both together?*

TRIAL CLOSE

What Is It?

Trial close provides a quick sense of where the group is on an issue.

When Do We Use It?

- When we are in the closing phase of problem analysis or solution identification
- To see how close we are to reaching a consensus

How Do We Use It?

1. If you think the group is reaching closure, say "I need a sense of where we are on this. How many are ready to support Option A? Option B?"
2. If one or a few participants prefer Option B and the majority prefers Option A, follow-up questions to those who don't prefer Option A can be the following:
   - *What will it take for you to support Option A?*
   - *What can we add to Option A to make it something you can live with?*

SERIES OF WHY ELSE

What Is It?

"Series of why else" *opens* the "series of why" technique to gain breadth of initial causes.

When Do We Use It?

- When a need exists to
  - ◊ Challenge a team to look at the breadth of a problem
  - ◊ Challenge basic assumptions about a problem

How Do We Use It?

1. Ask "why" the problem exists.
2. Record the response at the top of a flip chart or board.
3. Ask "why else," and record the second response next to the first one, horizontally across the flip chart or board.

4. Continue asking "why else" questions until all potential causes have been considered and recorded.
5. Record each response at the top of a column.
6. Follow up each answer to a "why else" question with a series of "why" questions to determine the root causes.

Note: See the "series of why" example for how "series of why else" is used.

SERIES OF WHY

What Is It?

"Series of why" digs down to the root causes of a problem.

When Do We Use It?

- When a need exists to
  - ◊ Challenge a team to look at the depth of a problem
  - ◊ Challenge basic assumptions about a problem
- To analyze the initial causes and symptoms for root causes
- After "series of why else" has identified the initial causes.

How Do We Use It?

Option 1 (oral)

1. Select an initial cause identified in "series of why else."
2. Ask "why" the problem exists.
3. After each answer, challenge the team with another "why" question.
4. Continue asking "why" questions until the team identifies a root cause.
5. Record the root cause.
6. Select another initial cause identified in "series of why else" and repeat Steps 1–5.

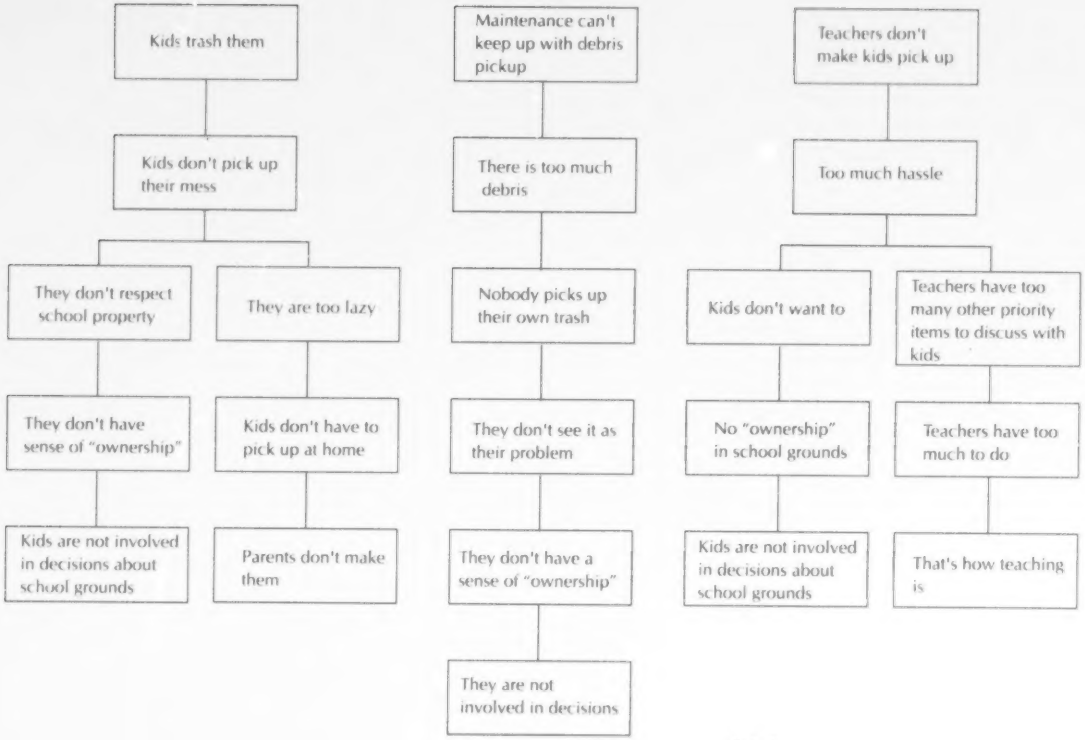
Note: Do not lose sight of the initial problem when asking the series of "why" questions.

Option 2 (written)

1. Select an initial cause identified in "series of why else."
2. Ask "why" the problem exists.
3. Record the response at the top of a flip chart or board.
4. After each answer, challenge the team with another "why" question, and record it vertically under the first response, forming a column.
5. Continue asking "why" questions until the team runs out of answers or answers appear nonsensical.
6. Select another initial cause identified in "series of why else" and repeat Steps 1–5.
7. Look for recurring themes, which suggest a root cause. The last "why" answered may indicate a root cause.
8. Circle the root causes.

Example of "Series of Why"

Why are our school grounds messy?


Kids trash them
Kids don't pick up their mess
They don't respect school property
They are too lazy
They don't have sense of "ownership"
Kids don't have to pick up at home
Kids are not involved in decisions about school grounds
Parents don't make them
Maintenance can't keep up with debris pickup
There is too much debris
Nobody picks up their own trash
They don't see it as their problem
They don't have a sense of "ownership"
They are not involved in decisions
Teachers don't make kids pick up
Too much hassle
Kids don't want to
Teachers have too many other priority items to discuss with kids
No "ownership" in school grounds
Teachers have too much to do
Kids are not involved in decisions about school grounds
That's how teaching is

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How to Solve Typical School Problems

In this addition to ASCD's how-to series, Nancy Ohle and Cindy Lakin Morley explain how to solve school-based problems by using a two-phase problem-solving process and tools based on the principles of Total Quality Management. They present three case studies to illustrate their approach: scheduling for gifted and talented students at an elementary school; developing a school discipline policy at a high school, and selecting a course textbook at a college. To work through the process of analyzing a problem and identifying a solution, team members use tools such as an affinity diagram to encourage creative thinking, a relations diagram to help determine cause-and-effect relationships; and prioritization techniques to rank issues and alternatives. The second part of the book is a reference guide that explains when and how to use the tools.

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Association for Supervision and Curriculum Development

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